10 Miles S. E. of San Juan Capistrano, Cal.

May 8 1902.

General Notes.

Camp was made in the bottom lands of the San Mateo Creek, half a mile from the ocean beach. No running stream now, but a pool of fresh water was in the channel. Along the railroad track was several acres of tulles in which I set 20 meat baited traps. These yielded only ~~Perognathus~~ gambeli. On most of the meat baits were one to four short thick leeches. In the bottom grow some willow and sycamore trees, and there is considerable water-mody brush. I had hoped to find Perognathus pacificus here, but caught none of the genus. This locality is in the extreme north eastern corner of San Diego County.

F. Stephens.

10 Miles S. E. of San Juan Capistrano, Cal.

May 8 1902.

Mammals.

Lepus ilortianus auduboni. Common.

Microtus californicus? Three caught in runs in grass. None taken nor runs seen in tulles.

Neotoma lascipes macrotis. Nests seen, mostly in cactus patches.

Peromyscus Eremoeli. Abundant. 18 caught. No other Peromyscus taken.

Thomomys Iuivus nigrescens. Abundant. One shot.

Perodipus agilis. Abundant.

Spermophilus beecheyi fisheri. Common.

Zaiophus californianus. Heard from the seal rocks two miles west.

Taxidea taxus. Skeleton with smashed skull seen.

Canis ochropus? Track seen.

One bat seen.

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F. Stephens.

Whitewater to Providence Mts.

Itinerary.

Whitewater Ranch is near Whitewater Station on the S. P. R. R. in the lower end of the San Gorgonio Pass. Crossed Whitewater Creek in one mile. This is the last stream that we shall see until reaching the Colorado River. Road crosses a little corner of the Colorado Desert and turns up the sandy canon of Morongo Pass. At the head of the canon is a basin of two or three thousand acres draining through a box canon into the Colorado Desert. In this basin is Warrens Ranch, (alt. 2500) 15 miles from Whitewater. As this is in the spurs of the San Bernardino Mts. the flora is that usual in the eastern foothills of that range, and resembles that of the eastern slope of the Cuyamaca Mts., San Diego Co.

From Warrens Ranch the road leads over a summit of about 4000 ft. alt. to Warrens Well on the Mojave Desert slope, 12 miles. There were a few Yucca brevifolia trees on the Colorado Desert side. These were common on other slope to a little below Warrens Well, but none seen since. I could see a few pinon trees on the summit of the mountains a few miles south of Warrens Well. I find that I should have made a station here, but the feed was cleaned up by the cattle for miles around and I supposed that 29 Pal was a better place.

Made a dry camp 10 miles east of Warrens Well in a larrea and cholla cactus plain. May 17th. at noon reached 29 Palms (alt. 2200) 22 miles from Warrens Well. I was greatly disappointed to find 29 Palms to be but a tiny oasis in the plain, three miles from the nearest foothills, and those of the barrenest kind. There are about twenty palm trees, a few willows and mesquit growing along a narrow silt salt grass cienega of perhaps an acre extent. There were two Indian families and two white men living here. Several cats and dogs succeed in keeping the native mammals reduced to small numbers. In the afternoon a sand storm commenced which blew furiously all night, moderating a little in the morning but continuing throug our stay.

The next water was at Paydad, a station on the A. T. & S. F. R. R. (alt. 1100) 39 miles from 29 Palms. Road sandy, passing over a divide a

the deserted Bullion mine, 17 miles, down a long sand wash to, and across, a dry lake bed over a very barren country, showing scarcely a trace of animal life. Made a dry camp midway.

From Ragtag we followed the R. R. to Fenner, 50 miles. Route over a barren plain, with groups of low mountains on each side at a few miles distance. This part of the route shows the lowest signs of animal life of any region I ever traveled over. There has been no rain since last August, and none to do any good for years.

At Fenner we turned northeast to Providence Mts. 24 miles, soon getting where vegetation became more plentiful. Signs of mammal life increased in quantity as we drove up the gentle slope. Birds and insects were still very scarce, and scarcely a plant is in bloom.

Whitewater to Providence Mts.

Birds.

Plegadis guarauna. Four seen at Whitewater.

Ereunetes occidentalis? Sanda sandpiper at 29 Palms.

Aegialitis vocifera. 29 Palms.

Lophortyx californica vallicola. Warrens Ranch.

Zenaidura macroura. Seen at Warrens, 29 Palms, and more or less frequently along the whole route.

Cathartes aura. 29 Palms, Bagdad. Not common.

Buteo borealis calurus. One seen south of Bagdad.

Falco mexicana. 29 Palms, one.

Falco sparverius deserticolus. Generally distributed but not common.

Phalaenoptilus nuttalli californicus? One seen at 29 Palms. Migrant.

Chordeiles acutipennis texensis. Warrens Ranch, 29 Palms.

Tyrannus alexandri. Two young of the year were on the wing. at 29 Palms

Tyrannus verticalis. Warrens Ranch, common, 29 Palms.

Myiarchus cinerascens. Occasionally seen between Whitwater and Bagdad.

Contopus richardsoni. 29 Palms. Danby.

Otocoris alpestris chrysolaema. Seen occasionally along the railroad.

Corvus corax sinuatus. Seen at Warrens Well and at Bagdad.

Molothrus ater obscurus. Seen at Warrens Ranch, 29 Palms, Bagdad and Dan.

Xanthocephalus xanthocephalus. Warrens Ranch, 29 Palms, Bagdad.

Icterus parisorum. One seen near Warrens Well.

Zonotrichia leucophrys. Migrants occasionally seen.

Pipilo fuscus mesoleuca. Warrens Ranch.

Piranga ludoviciana. Warrens Ranch, 29 Palms. A male came into 29 Palms soon after our arrival there. It appeared exhausted, but the next day it it fed about and became very tame, catching flies at our camp in the l of some bushes. It alighted on our shoulders several times.

Piranga rubra cooperi. The white men at 29 Palms described a male of thi species that they said had appeared in the shrubbery a fortnight previously and remained about a week. Probably a straggler from the Colorado

Hirundo erythrogaster. Several seen at 29 Palms. Probably residents.

Lanius ludovicianus gambeli. Warrens. 29 Palms.

Helminthophila celata lutescens. 29 Palms.

Wilsonia pusilla pileolata. 29 Palms.

Harporhynchus lecontei. 29 Palms, Danby and along the route.

Heleodytes brunneicapillus bryanti. Warrens Ranch.

Auriparus flaviceps. 29 Palms.

Whitewater to Providence Mts.

Mammals.

Ovis nelsoni? I saw tracks a fortnight old in the wash 15 miles south of Bagdad. I think they were tracks of two Bighorns. There is no known water in any direction nearer than the well at Bagdad. The animals were probably migrating.

Ammospermophilus leucurus. Seen along the route more or less frequently until reaching the dry lake south of Bagdad. Very rare along the R. R. Saw no S. mojavensis though I was on the lookout all the way.

Perognathus megalotis deserti. One caught at Warrens Ranch. Not observed elsewhere.

Neotoma desertorum. "Trading Rats" were said to occur at 29 Palms, but I failed to catch any. Nests and signs were seen in a cliff at the dry camp midway between 29 Palms and Bagdad. Set several traps but caught none.

Peromyscus eremicus. Caught one at 29 Palms and three at the dry camp 20 miles south of Bagdad. Not noted elsewhere.

Peromyscus gambeli desertícola. Common at Warrens Ranch.

Thomomys bottae pallescens? Common at Warrens Ranch. One caught. None noted elsewhere.

Dipodomys merriami insularis. Warrens Ranch, 29 Palms, dry camp south of Bagdad, near Fenner. Rather generally distributed along the route.

Dipodomys deserti. More or less common along the route. almost the only mammal living along the R. R. from Bagdad to Fenner.

Perognathus panamintus. Near Warrens Well, 29 Palms, near Fenner. Apparently not common.

Perognathus penicillatus angustirostris. 29 Palms, ?near Fenner.

Perognathus fallax pallidus. Warrens Ranch: apparently rather common in the rocky hills at the head of the canon.

Lepus californicus audubonii. Whitewater, Warrens Ranch.

Lepus texianus eremicus. Seen occasionally on most of the route.

Canis ochropus estor? Saw one near Danby. Not common. Tracks seen.

Pipistrellus hesperus. Warrens Ranch, 29 Palms.

Lasiurus cinereus. Warrens Ranch, one.

(Over).

Nyctinomus mojavensis? One shot at 29 Palms had a white nape, probably albinistic. Species rather common there but the sand storm prevented my my getting more. Bats, perhaps of other species were seen at other places.

Providence Mts. Cal.

May 24 to June 7 1902.

General Notes.

The Providence Mountains are three to five miles wide at base by about twelve in length, southeast to northwest. At the northern end they connect with a broken mesa of volcanic rocks carrying a sparse growth of pinon and cedar; the remainder of the range is surrounded by a plain. The southeastern third of the range is "porphyry", running up to a very ragged serrated crest. The remainder of the range is limestone, with the strata tilted up at about 30° angle. The eastern side is bold and rugged but climbable in most places. Much of the western side is composed of immense, nearly perpendicular cliffs, there being very few places where one can climb from the base to summit. Theplain surrounding the range is about 3000 feet alt. sloping up all around the range to meet the steep mountain sides at about 3800 to 4500 alt. The summit of the range is from 6000 to 7000 alt. several peaks reaching the latter height.

The prevailing growth of the plain is larrea, small and parched on the open plain, greener and thriftier at the foot of the mountains. Many cactuses grow among the larrea, chollas (Opuntia) being the most comon. All the range above 5000 alt. has been fairly well timbered with pinon and juniper, the pinon predominating. All accessible timber within ~~within~~ five miles of the mine and mill (at northeast base) has been cut. There are no other species ofconifers on the range.

The oldmining camp of Providenceis about 22 miles from the railroad station of Fenner. The mill burned some years ago and the mine has been idle since. Six or eight prospectors comprise the population of the town now, two of these running a concentrator on the tailings. Water is obtained from a well and is pumped two miles to the old mill site. Six miles south Cold Spring furnishes insufficient water for the little band of stock running at it. Cornfield Spring is on the opposite side of the range; ~~X&YY~~ a well a few miles north of that spring completes the list of waters around the Providence Mountains, one of the poorest watered ranges, for its size, in the region.

We camped three or four days at the old mill site and then moved four mile south to the mouth of the largest canon, remaining there eight days, going to the old mill site every other day for water. From this camp on clear days the Hualapai Mountains were plainly to be seen over the low desert ranges intervening. From the summits of the Providence Mountains the still snow clad peaks of the San Bernardino Mts. are distinct in the southwest. I am told that snow laid on the northern slopes of the peak southeast of our camp until the middle of April this spring. Some snow fell here last winter but very little rain came. Few perrennials are blooming and there are almost no annuals. Birds and mammals are very scarce.

Providence Mountains, Cal.

May 24 to June 7th 1902.

MAMMALS.

Ovis nelsoni. Tracks of Bighorns, varying in age from a few fresh ones to as old as could be distinguished, were scattered over most parts of the rang visited, but were most common in the less rocky places. Saw droppings in many places, and quite a number of beds. These beds were in most cases in open places giving a good view of the surroundings; very few were in the shtee of trees or cliffs.

The first day we were up on the mountain I passed up through the pinons nearly to the highest summit. ON the way I fired a shot at a bird at about 5500 alt. An hour later Mr. Brandegee passed over the same route botanizing. When about where I fired at the bird he heard something run below him and soon a n ewe ran across the gulch and stopped and looked at him.

I hunted Bighorns nearly half the time but saw none until the last day when I got one under the following circumstances. On thn afternoon of June 5th. I packed my blankets on a horse and made a dry camp at about 5000 alt. in the canon above the mine. The morning of the 6th. I was off at five o'cloc About 7 I found fresh tracksin the lowest saddle at the head of the canon. I found they had come back againand followed up the divide, which was bordered on the west side by perpendicular cliffs in many places. At 6500 alt. a little spur of the mountainran out west some 200 ytrds and dropped off abruptly. It had a pass next the main peak, which was a perpendicular rock several hundred feet higher. I looked over this pass but saw no signs of Bighorns and was watching an Eutamias at my right a few yards. To the left in front a very steep gulch ran down out of sight, nearly cutting the spur off from the main peak. Presently I heard stones rolling down this gulch and moving a step forward saw the white rumps of two Bighorns going down around the corner of the cliff hiding the view of the lower part of the gulch, and one Bi Bighorn stopping to look up at me. I fired and she sank in a heap and presently rolled over the cliffs edge and disappeared also. Working my way

down I passed ~~xxxxxx~~ towards two beds freshly pawed out of a little earth under the cliff I had been looking over. I found that the ewe I had shot had fallen twenty feet, breaking one horn, and rolled a hundred feet farther down the rock slide in the gulch. I heard stones rolling down a gulch around the main peak where the other Bighorns were evidently scrambling up, but they were out of sight and I was not climber enough to pass around the ledges to follow them, even if it was possible to overtake them. It took me nearly an hour to get the ewe up to where I stood when I fired, not much over a hundred yards, and until 2 P. M. to carry, roll and slide her to a place where I could bring my horse.

The stomach was full of freshly eaten leaves and twigs of shrubs; among the mass were bits that Mr. Brandegee identifies as leaves of Rhamnus crocea, male flowers and stems of an Ephedra and unripe fruits of Rhus aromatica trilobata. In the mass was very little grass, which I had supposed they principally, as bunch grass was abundant where the Bighorn signs were most common.

From what I saw of the habits of these Bighorns in watching "signs" as I hunted them I came to the conclusion that they seldom go to water, at least in cool or moderately warm weather. This is corroborated by the observations of old John Domingo, who has lived at Providence many years. He says that the Bighorns very rarely go to the Cornfield Spring and never to Cold Spring. He says the Indians therefore do not lie in wait at the springs but hunt x them on the mountains, or finding some place where tracks were plentiful hide and wait for them to come along.

Eutamias palmeinids? I saw quite a number of Chipmunks, but they can not be said to be common. I think I saw none below 8000 alt. and found them most common towards the summits. When hunting Bighorns I carried a 30-30 rifle, and in these hunts saw twice as many Chipmunks as in the remainder of the time I spent on the mountains. We succeeded in getting but four. Their habits were like those of the speciosa group, but I heard less sounds from them than usual. Their being so quiet made it harder to hunt them. I saw several in trees and they seemed very good climbers.

I saw no Sciurus, Sciuropterus or Callospermophilus.

Spermophilus grammurus ss? Rock Squirrels were generally distributed over the mountains above 4000 alt., reaching nearly to the summits, but were most frequently seen at about 5000 alt. They preferred the rocky gulches, and were not seen on the plain at all. They were rather silent.

Ammospermophilus leucurus was not very common, very few being seen until reaching the foot of the mountains, where they were more plentiful. They were not found above the edge of the plain, none being seen in the pinons, nor above the mouths of the canons.

Peromyscus eremicus. Common at the base of the mountain an in the upper edge of the plain.

Peromyscus sp.? There appear to be at least two more species in the higher parts on the mountains, but they are too difficult for field identification. At 5000 to 5600 alt. we got a very large eared species and another with medium sized ears. These were caught in traps set among the bunch grass in the pinons. The large eared species was but moderately common, the other very abundant. We averaged a mouse to every other trap, but got nothing but Peromyscus, except Neotoma in steel traps. Snakes were rather common in these places and appeared to be the only things feeding on the mice. Saw none of the short tailed Peromyscus.

Neotoma sp.? Signs of Brush Rats were rather common everywhere, on plain and mountain. On the plain their nests were seen in the cactuses, and in the mountains in the crevices of the rocks.

Saw no signs of Microtus anywhere.

Thomomys sp.? Gophers were rare and I saw no fresh work anywhere. I saw a very few old mounds on the plain and also in one place at about 6000 alt. Traps set in each place were not disturbed.

Dipodomys merriami ss? Found only in the sandy land near our lower camp.

I saw burrows of D. deserti a few miles northwest of Fenner, but none within ten miles of the mountains.

Perognathus panamintus. Taken in the sand wash with the Dipodomys at our lower camp.

Perognathus penicillatus. Rather common at the upper edge of the plain and a short distance up the mountain sides. They made burrows somewhat like, but smaller than Perodipus agilis, varying occasionally toward those of Dipodomys deserti, throwing up little mounds with several openings to the burrow underneath; some openings being closed but the greater number left open. I dug into some of these mounds: in one side chamber were hulls of Thamnosma seeds which plant grows abundantly all about but the seeds were not yet quite ripe In another chamber of the same burrow were a tablespoonful or more of the ripe blackish seeds of the same plant, perhaps of last years storage.

Lepus floridanus audubonii? Not common. Upper edge of the plain.

Lepus texanus eremicus. Abundant around the base of the mountains. Saw no hares of any species above the mouths of the canons.

Canis ochropus estor? Coyotes were not common. One came about camp at Cayoreax one morning and the same or another individual was seen one evening and coyotes were heard two or three times. Jackrabbits are plentiful for food, but the cactuses are too thick for pleasant coursing.

Pipistrella hesperus were the most common bats, but they were not common. Hiding places in the cliffs are plentiful, but insect food is scarce.

Vespertilio fuscus were somewhat less common. I think I saw another species of bat but did not get a specimen nor recognize the species.

Providence Mts. Cal.

May 25 to June 7 1902.

BIRDS.

Lophortyx gambeli. Not common. Upper edge of plain and lrwer foothills. Two broods of young seen.

Zenaidura macroura. Common.

Cathartes aura. Not rare. One came to the offal of the bighorn I killed before I got the carcass up the hill.

Buteo borealis calurus? A Hawk not well seen was apparently of this sp.

Falco mexicanus. One seen.

Falco sparverius deserticolus. One seen.

Megascops asio bendirei? One seen, in pinons in canon, but escaped me.

Bubo virginianus subarcticus? Mr. Brandegee saw two Great Horned Owls on a cliff of the broken mesa at the north end of the mountains. None heard.

No Woodpeckers seen.

Phalaenoptilus nuttalli. Heard nearly every night. Foothills and upper edge of the plain.

Aeronautes melanoleucus. Rather common.

~~Xxxxx~~ Calypte costae. Several small female Hummers seen but no males.

Tyrannus vociferans. One seen at upper edge of plain. Migrating?

Myiarchus cinerascens. Rather common on the upper edge of the plain and i the lower part of the mountains.

Sayornis saya. Two seen.

Contopus richardsoni. Rather common in the mountains.

An Empidonax was seen but not identified.

Aphelocoma woodhouseï? Several seen but none taken. Wild.

Icterus parisorum. Quite a number seen and heard at 5000 to 6000 alt.

Carpodacus mexicanus frontalis. Not common.

Spizella atrigularis Saw a female with a larvae in her mouth, at about 5500 alt. No others seen.

Junco oreganus thurberi. Saw one at 6000 alt.

Amphispiza bilineata deserticola. Rather common at upper edge of plain.

Oreospiza chlorura. Saw one at about 8000 alt.

Zamelodia melanocephala. Females were rather common at 4000 to 6000 alt. Prooably migrants. No males seen.

Piranga ludoviciana. Several seen.

Tachycineta thalassina. Rather common near the summits.

Lanius ludovicianus gambeli. One seen two or three miles out on the plain.

Vireo gilvus. Heard at about 5000 alt. a few times.

Vireo solitarius cassini. 5000 to 8000 alt. Not common.

I thought that I heard V. vicinior also, but their notes are similar to those of cassini and I am not certain.

Dendroica nigrescens. Rather common from 5500 to the summits.

Wilsonia pusilla pileolata. Rather common. Apparantly migrants.

Phainopepla nitens. Several seen at foot of mountains.

Mimus polyglottos. Saw one at the mine at the upper edge of the plain.

Harporhynchus lecontei. Saw several at upper edge of the plain.

Heleodytes brunneicapillus. Several seen at our lowest camp.

Salpinctes obsoletus. Heard at 5000 to 8000 alt. Not common.

Catherpes mexicanus conspersus. Ditto.

Troglodytes aedon parkmanni. Several seen at about 5000 alt. None shot.

Parus inornatus. Seen twice when carrying the 30-30. 5500 and 6300 alt.

Psaltriparus plumbae. Small flock seen at 8300 alt.

Polioptila caerulea obscura. Seen at about 5000 alt.

Mojave Valley, California and Arizona.

General Description.

June 10th to 18th. 1902.

The region between the canon below Needles and the one above is known locally as Mojave Valley.

We reached Needles the evening of June 9th. Most of the next two days were spent in packing and shipping such specimens as were ready; then we trapped two or three days in the neighborhood to learn what was there. The river bottom is covered with a thick growth of arrowweed, five or six feet high in the old ranches, formerly farmed for some years and then abandoned, larger tnd with some willow, mesquit and cottonwood where the land had never been used. There are few large trees, these having been cut for wood and timbers. There is not much animal life in this arrowweed covered bottom, and what there is can hardly be found because of the difficulty of getting through the thick brush. A strip of bare "second bench" lies between the brush covered bottom and the mesa which is a slope several miles wide, in some places bordering the second bench with low bluffs, in others blending with it. There was rather more animal life in the washes of the mesa than elsewhere. In these washes grew some desert shrubs, usually but few.

June 15th. we ferried over the river, a difficult job. The overflow has been very small this season, and the river was falling. We drove up river ten miles and camped over night at H. Roberts ranch. There I learned that muskrats were living in a pond at Wm. Roberts ranch and in the morning drove back four miles and a mile off the road to Y Lake, a pond in the old channel, half a mile long by 100 yards wide. The "lake" is but five feet deep, mud bottom and shores, bordered by banks 10 to 15 feet high in most places and surrounded by willow, mesquit and arrowweed. It contains several species of fish. Wm. Roberts has a ranch on one side of the lake, irrigated with water pumped from the lake. Half a mile east, in another old channel, is Spears Lake, a series of ponds at this stage of water, about four miles long. It is similar to Y Lake except that the banks are lower. The overflow did not reach these lakes this season.

Mojave Valley.

Mammals.

June 10 to 18 1902.

I am told that no deer occur in the Valley now.

Spermophilus tereticaudus ss? Not very common. "Second bench" mostly, and in the mouths of the washes of the mesa. Most of those obtained were caught in traps set for A. leucurus. The first two caught were roasted by the sun after that Carl visited the traps almost hourly.

Ammospermophilus leucurus. Found only in the washes at the edge of the mesa. Evidently rare. I shot one. We kept several traps set but caught none. I saw but the one I shot and Carl but three or four. The Postmaster told me that they got into his garden (below edge of mesa) and ate his vegetables, so he had shot all he could find, less than half a dozen.

Could find no traces of Sigmodon, Reithrodontomys, Onychomys or Microtus.

Castor canadensis irrondator. Stumps of old beaver cuttings are abundant on Y Lake and some on Spears Lake but I could find no new work. Residents here say that the last beaver were caught several years since.

Peromyscus eremicus. The only one seen was caught at Y Lake. It was eaten by ants.

P. texanus deserticola. Caught but one of this species, which was also destroyed by ants. Saw a few Peromyscus tracks, but this genus is apparently rare here, and partly replaced by Perognathus.

Neotoma sp? Caught two in traps set for Fiber in burrows under roots of trees. Found but one nest. In a trap set there I found a fore foot where the animal had gnawed loose.

Fiber zibethecus pallidus. From the number of old burrows seen muskrats must have been abundant at Y Lake at some former period. I saw but few old burrows at Spears Lake. I put out 15 traps the first night on Y Lake, increasing to 25 the second and third nights, but had but two traps disturbed except by Neotoma and these two were probably sprung by something else than muskrats. All burrows found were one to eight feet above the present water level. I waded around in the lake to try for under-water entrances

Mojave Valley.

Birds.

June 10 to 18 1902.

Querquedula cyanoptera. Saw a pair on a pond near Needles.

Tantalus loculator. Saw one on Y Lake and another on Spears Lake.

Ardea virescens anthonyi. Several seen.

Nycticorax nycticorax naevius. Several heard in the night.

Fulica americana. Not common.

Aegialitis vocifert. Saw several.

Lophortyx gambeli. Rather common, mostly with young broods.

Zenaidura macroura. Not very common.

Melopelia leucoptera. Heard near Needles and Y Lake.

Cathartes aura. Seen near Y Lake.

Buteo borealis calurus? Saw a hawk at Y Lake that appeared to be this sp.

Megascops. Heard a screech owl at Y Lake but could not find it.

Micropallas whitneyi? I heard a small owl whose ntes resembled those of this species as near as I can remember them.

Geococcyx californianus. Y Lake, not common.

Coccyzus americanus occidentalis. Saw one at Y Lake. Heard in several other places.

Melanerpes uropygialis. Not common. Gila

Chordeiles acutipennis texensis. Abundant.

Tyrannus verticalis. Not common.

Myiarchus cinerascens. Rather common.

Sayornis saya. Not common.

Corvus corax sinuatus. Rare.

Molothrus ater obscurus. Common.

Agelaius phoeniceus. Rather common.

Icterus bullocki. Not common. Saw young.

Melospiza lasciata fallax. Not common.

Pipilo aberti. Rather common.

Cuiraca caerulea lazuli. Not common.

Birds 2.

Cyanospiza amoena. Not common.

Phainopepla nitens. Not common.

Lanius ludovicianus excubitoroides. Saw one.

Vireo bolli pusillus. Heard at V Lake several times.

Icteria virens longicauda. Not common.

Harporhynchus crissalis. Not common.

Amiparus flaviceps. Rather common.

Hualapai Mountains, Arizona.

General Description.

The wagon road from Kingman runs to an old sawmill, now removed, about 14 miles from Kingman and a mile below the summit of the saddle or pass between the two highest groups of peaks. Altitude of pass 6300 feet. The first two miles from Kingman is up a canon, then the road runs up a sloping mesa five or six miles to the foot of the mountain at about 4500 alt. The only available water now is the spring at the old mill site. I was told of spring over the summit and we went there to camp first, but the spring was dry and after packing water three days from the old mill site we moved back there.

The Hualapai Mountains are granitic, and are covered with chapparal similarly to the Californian mountains. This chapparal consists principally of a low scrub oak about five feet high. Mixed with the scrub oak is a little manzanita and other shrubs. Scattering pinons grow among the chapparal on the lower parts of the mountains; these are replaced by pines at about 5500 alt. (yellow pine and Jeffries pine). There are most pines on the northward exposures, and in some places they form patches of forest. There are a few firs on the mountain side above the old sawmill. Among the highe group of peaks is a basin of perhaps a hundred acres, in which are several groves of aspens. This basin lies at an altitude of 7300 feet with peaks around it nearly a thousand feet higher. I visited this basin but once, as I [illegible] special interest. It has been the "run" of a [illegible] but the spring does [illegible] three miles away. [illegible]

Hualapai Mountains, Arizona.

General description.

The wagon road from Kingman runs to an old sawmill, now removed, about 13 miles from Kingman and a mile below the summit of the saddle or pass between the two higher groups of peaks. Altitude of pass 6300 feet. The first two miles from Kingman is up a canon, then the road runs up a sloping mesa five or six miles to the foot of the mountain at about 4500 alt. The ~~only~~ only available water now is the spring at the old mill site. I was told of a spring over the summit and went there to camp first, but the spring was dry and after packing water from below three days we moved back to the old mill.

The Hualapai Mountains are g

Hualapai Mts. Arizona.

June 29 to July 9 1902.

Mammals.

Odocoileus sp.? I am told that deer are now quite rare on this range. I saw the track of a small deer near camp.

Bighorns are no longer found here though in the early day a few were killed here.

Eutamias sp.? Rather common, but quiet. Frequent the chaparal and can only be shot in the road or in the few open places, thebrush being too thick to see them elsewhere. I heard the usual chipmunk notes, but they seldom used them. We caught but one in a trap.

I saw neither Sciurus or Callospermophilus, nor any traces of them.

Spermophilus grammurus. Rather common. Shy. Frequent rock piles and cliffs. Most of the specimens sent were caught in meat baited traps. I heard their notes but two or three times; these were louder and sharper than those of S. beecheyi.

Neotoma sp.? Not very common. I saw but few piles of sticks and trash: these were under rocks or in crevices.

Peromyscus sp.? Not common. Rocky gulches. Would not enter meat baited traps

Thomomys fulvus ? I saw but one little group of gopher mounds: a trap set there was filled with dirt every day for a week and I did not succeed in catching the gopher.

Lepus floridanus arizonae. Common in the washes of the mesa below the mountain. Not rare in the brush in the mountains up to 6500 alt., but as the brush was thick snap shots in the road or in the few open places in the brush was the only way to get them.

Lepus texanus. Rather common on the mesa at the foot of the mountain.

Lynx baileyi. Caught two in meat baited traps set along the road.

Vesperugo fuscus? A few large, steady flying bats were seen, but they flew high, usually out of range and we got but one.

Pipistrellus hesperus. Common, appearing before sunset.

Ammospermophilus harrisi. Saw one in the lower edge of the pinons a little above 5000 alt. and a few hundred yards up the road we saw a Eutamias, this shows that the ranges of the two species meet and probably overlap.

Mammals 3.

Dipodomys merriami. Not common.

Dipodomys deserti. Rather common in the higher parts of the bottom and edge of the mesas.

Perognathus penicillatus. Abundant in the bottom lands and rather common in the eastern ed. the mesas. (Some specimens taken in the washes opposite Cibolo are slightly spiny).

Perognathus intermedius. Rather common in the bluffs at the edge of the mesa at Parker and Ehrenberg, the only places in the valley where I could trap on the mesas on the Arizona side. None found on the California side.

Lepus floridanus arizonae. Not at all common anywhere in the valley. The specimen taken opposite Cibolo has a short hind foot, long tail and ears.

Lepus texianus cremicus. Rare. Saw two opposite Cibolo. None shot.

Felis sp.? The settlers here have lost a number of colts caught by "mountain lions". One man had been trapping for them some time without success.

Lynx sp.? The settlers say they occasionally see wild cats.

Canis ochropus ~~estor~~. Common.

Urocyon californicus? Said to occur but not very common.

Vulpes macrotis. I saw a few tracks in the washes of the mesas that I supposed to be made by this species. Well known to the settlers here under the name of "swift".

Procyon pallidus. I saw some tracks around the lagoons, but more along the banks of the main stream. Did not succeed in catching any.

Bassaris occidentalis? Said to be common in the valley. An immature specimen caught near McFees ranch may be macroura.

Pipistrella hesperus. Not very common.

Myotis sp.? Common. Caught a number in the daytime with a butterfly net in a vacant house at Ehrenberg. No large bats seen.

Hualapai Mts. Arizona.

June 20 to July 9 1902.

BIRDS.

Lophortyx gambeli. Rather common up to 6500 altitude. Several broods of young seen.

Zenaidura macroura. Rare.

Cathartes aura. A few seen.

Falco sparverius deserticola. Several seen including young of the year.

Bubo virginianus subarcticus. Heard at about 6000 altitude.

I heard some small owl each night we were camped at the summit, but was unable to find it. It may have been a Megascops but the notes sounded to me more like a Glaucidium.

Dryobates villosus hyloscopus. Not common.

Melanerpes formicivorus bairdi. Several, probably a family. Frequented the trees around our camp at the summit.

Colaptes collaris. Not common but generally distributed.

Phalaenoptilus nuttalli. Heard nearly every evening.

Chordeiles virginianus henryi. Rather common.

Aeronautes melanoleucus. Common about the higher parts of the range.

Selasphorus platycercus. I saw a few females or immature birds that from their larger size I suppose to be platycercus.

Tyrannus vociferans. Not common.

Myiarchus cinerascens. Rare.

Empidonax difficilis. Saw one.

Cyanocitta stelleri macrolopha. Shot one; saw no others.

Aphelocoma woodhousei. Rather common, mostly young of the year.

Molothrus ater obscurus. Saw one flying down the canon.

Carpodacus mexicanus frontalis. Not common.

Spizella atrigularis. Several seen, apparently one family.

Saw no Juncos.

Pipilo maculatus megalonyx. Common.

Zamelodia melanocephala. Seen several times.

Guiraca caerulea. Saw one male.

Birds 2.

Vireo solitarius plumbeus. Rather common in the pinon belt. Not heard above 8000 altitude.

Piranga hepatica. Carl shot a male near the summit in apine. Neither of us saw any others.

Helminthophila virginae. One shot; others seen.

Mimus polyglottos. One frequented the brush from the old mill site to the summit.

Harporhynchus crissalis. One shot and another seen just north of the summit. A nest and two eggs found in the pinon belt. I never before found this species as high as the pines.

Salpinctes obsoletus. Rather common.

Catherpes mexicanus conspersus. Not common.

Sitta pygmaea. Rather common.

Psaltriparus plumbeus. Common up to 8500 altitude.

Polioptila caerulea obscura. Not common.

Sialia [illegible] 8000 [illegible] spotted young, in the basin among

Little Meddows, Mohave Co. Arizona.

June 21 to 23 1902.

We left the Colorado bottom lands the afternoon of June 20th. driving over a dry mesa for ten miles. On this mesa I saw no mammal, but one lizard and two birds. Passed near the landmark known as Boundary Cone, and camped for the night at Snowball mining camp. Next morning drove to Gold Road mining camp. The only water we found on the western side of these mountains was in wells at these two mining camps. In the afternoon we drove an exceedingly steep road up to the summit and down to Little Meadows. This route from the Colorado River to Beales Spring via the present camps and town of Gold Road and Kingman is said to be the oldest road across this mountain range of mountains, and was opened by the government nearly fifty years ago. It is probably the route traversed by the 35th. Parallel Pacific R. R. exploring parties. There used to be a nice stream of water at Little Meadows, but now the largest spring affords but water enough to irrigate a small garden and the "meadows" are gone. Little Meadows is about 21 miles by road and 15 air line from Camp Mojave. To Kingman is 23 miles. This is a broad canon, widening above and below, bordered by lava cliffs in some places and sandstone in others. Altitude about 2750, Summit about 4000. There are a few scattering junipers in the gulches, no pinon. Cholla cactuses and yuccas are the most common plants. Two or three miles below Little Meadows the canon opens into the Sacramento Valley, here about 15 miles wide.

Little Meadows, Arizona.

June 21 to 23 1902.

Mammals.

Spermophilus tereticaudus. Shot one in the western edge of the Sacramento Valley, three or four miles east of Little Meadows. This is the only one of this species that I have seen in Mohave County.

Spermophilus grammurus. Rtro. Both Carl and myself got glimpses of one at Little Meadows. Set traps out got none.

Neotoma Not very common. I caught two in the little patch of tulles, but a few yards square between cliffs at the upper spring. They made runways in the tulles like giant Microtus, and ate the tulle stems. I was puzzled at first to account for the big runways and set a number of traps.

Peromyscus eremicus. Common.

Thomomys fulvus. Caught two at the upper spring. There may have been one or two more, but there was but little signs of gophers there and I saw none elsewhere. The man living at the main spring says he caught two or three dark colored gophers in his garden last year, but has seen no gopher signs there since.

Perognathus intermedius. Probably rather common, but we caught none until the last night of our stay, and some of these spoiled, the day being very hot, 115° at 2 P. M. This species was caught on the rocky hillsides.

Perognathus Caught in the sandy wash below the main spring.

Lepus floridanus arizonae. Not common. Shot two half grown young and saw two adults.

Pipistrella hesperus. Abundant.

Myotis Rather common. Flew low.

Little Meadows. Arizona.

June 21 to 23 1902.

Birds.

Lophortyx gambèli. Common. Many young seen.

Zenaidura macroura. Not common.

Melopelia leucoptera. One seen, others heard.

Buteo borealis calurus. Two seen.

Cathartes aura. Several seen.

Phalaenoptilus nuttàlli. Heard.

Calypte costae. Several females and immature birds seen.

Dryobates scalaris bairdi. Parents and well grown brood of young seen.

Tyrannus verticalis. Not common.

Myiarchus cinerascens. Several seen.

Amphispiza bilineata. Seen.

Carpodacus mexicanus frontalis. Rather common.

Pipilo fuscus mesoleucus. Saw several.

Halminthophila luciae. Saw parents and a brood of young. I saw none of this species in the ~~Color~~ Mohave Valley, perhaps because I did not go to a good place, but I doubt their being common in the Valley, and Coopers types may have been stragglers from the region eastward.

Heleodytes brunneicapillus. A brood of young seen.

Mimus polyglottos. Saw one.

Harporhynchus crissallis. Carl saw one.

Auriparus flaviceps. Common.

Polioptila plumbea. Saw several.

Beales Spring, Arizona.

General Description.

Beales Spring is two miles north west of Kingman. It was used in the early days as a supply depot for troops traveling from post to post. Some of the few buildings now on the ranch were built by the government. The spring is used now for irrigating about an acre of land, mostly planted in fruitttrees. The surrounding region is broken, the hills being mostly of a basaltic rock, the slopes and little valleys intervening being strewn with blocks and fragments of the same nature. The most common shrub is one of those known locally as "pala verde". It is of a species new to me and appears to be a Dalea. A few small scrub oaks grow in the talus at the foot of the cliffs and "cat claw mesquit" (Acacia sp.?) are scattered about. Cholla cactuses and a trunkless yucca are abundant. Annuals and other small things areentirely wanting because of the long drought.

Beales Spring, Arizona.

June 24 - 28 and July 10 - 12 1902.

Mammals.

Spermophilus grammurus. Two seen.

Ammospermophilus harrisi. Common.

Neotoma . Not very common.

Peromyscus eremicus. Rather common.

Thomomys fulvus? Old mounds seen in two places. Saw no fresh work.

Perognathus intermedius. Caught on rocky hillsides; do not apper very commo

Perognathus sp.? Apparently Rather common in the sand washes.

Lepus floridanus arizonae. Not abundant. Very wild. Coyotes were plentiful and the cottontails seemed to be very watchful for them. The lessee of th "ranch" shoots the hares at every opportunity to protect his garden. I fou it very difficult to get a shot at the few I could find. One morning a nearly grown cottontail ran into a crevice in the rocks where I was not able to reach it. I got the impression that they take refuge in crevices in rocks and burrows in the ground more freqently than usual with the western cottontails.

Lepus texanus eremicus. Saw very few in the neighborhood of Beales Spring, but they as wedl as the cottontails were more common on the mesa five to ten miles east and south of the Spring.

Vulpes macrotis? Saw tracks of a foxxcrossing the road.

Canis ochropus estor. Common. Caught two. One had in its stomach a quantit of hair and part of a skull of A. harrisi. The other stomach contained p principally scraps of skin, with hairs in place, gnawed from the dried c carcass of some cow. The first one caught commenced barking when I came up and kept doing so at short intervals until I shot him. The other utter no sound.

Myotis Sp? The smaller Myotis was not very common. They flew low.

Myotis? or Corynorhinus??Not rare but difficult to get as they flew very l usually under the fruit trees where it was impossible to shoot them.

Antrozous pallidus. One shot six miles south east of Beales Spring.

Pipistrellus hesperus. Common.

Beales Spring, Arizona.

June 24 to 28, 1902.

BIRDS.

Lophortyx gambeli. Not common. Few young seen.

Zenaidura macroura. Not common.

Cathartes aura. Common.

Buteo borealis calurus. Saw one.

Buteo swainsoni. Saw the dried remains of one.

Carl saw another small hawk but could not recognize it.

Dryobates scalaris bairdi. Saw two.

Phalaenoptilus nuttalli. Heard.

Calypte costae. Saw females and immature birds that appeared to be this sp.

Tyrannus verticalis. Saw several.

Myiarchus cinerascens. Ditto.

Sayornis saya. Saw three.

Corvus corax sinuatus. Common at the slaughter house, at Kingman.

Molothrus ater obscurus. Not common.

Icterus parisorum. Rather common.

Icterus bullocki. Heard once.

Carpodacus mexicanus frontalis. Abundant. Destroying fruit.

Amphispiza bilineata. Saw several.

Pipilo fuscus mesoleucus. Not common.

Zamelodia melanocephala. Common in the orchard. Destroying fruit.

Tachycineta thalassina. Saw one at Beales Spring and two below Kingman.

Phainopepla nitens. Rather common.

Harporhynchus crissalis. Saw three.

Harporhynchus bendirei. Shot two.

Heleodytes brunneicapillus. Rare.

Salpinctes obsoletus. Saw a family down the canon.

Auriparus flaviceps. Rather common.

Polioptila plumbea. Rather common.

Big Sandy Creek, Arizona.

General Description.

The Big Sandy Creek heads at about 35 15' lat. and 113 30' long. and unites with Santa Maria Creek at about 34 17' and 113 25', being known from the forks to the Colorado as Bill Williams River. The Big Sandy drain the south eastern fourth of Mojave County and the western edge of Yavapai County. The eastern branches head in the edge of the great Colorado Plateau The valley is narrow in most places, with rocky mesas sloping up to the mountains on each side. The first running water we found in the Creek as we traveled southward was about 30 miles from where we entered the valley and about 35 33'. We camped there (at Neales ranch) three days and then moved down stream four miles to Mc Cee's ranch just below the schoolhouse and opposite what is known locally as Sycamore Creek, but not the SYCAMORE Creek of the maps, which is known here as Burro Creek. Syctmore Creek (local) is a comparatively small stream. Two miles below the mouth of Sycamore Creek the Stndy enters a canon four miles long. At the mouth of this canon is Clarks ranch, where we camped two days. Two miles below Clarks ranch and just above a short canon is the mouth of Burro Creek, a large branch heading in the edge of the great plateau to the northeast. This creek is said to run through a narrow canon most of the way, impassable for wagons, and has water at frequent intervals in the dryest time. From where we first came to water in the Sandy the creek runs most of the way for ten miles. Five miles below the mouth of Burro Creek, at the head of another canon, is Signal. Here we left the Sandy and drove southwest up a gently sloping mesa, over a divide, through a broken region carrying giant cactuses thickly mingled with tree yuccas (Yucca brevifolia) and down a long sloping mesa to Bill Williams River. The shrubbery and trees of the Big Sandy bottom lands is arrowweed, watermody, willow and cottonwood in the damper land, and mesquit in the dry parts. The mesas each side have a considerable growth of cactus and "palo verde" and some larrea; in some places the cholla cactuses being large tnd abundant. For a few miles above where we came to the first running water fair sized tree yuccas were rather common on the western mesa. Along with these were the first giant cactuses we saw. These were not plentiful, nor very large, but increased in size and number in the canons

(over)

below. Mammals proved to be scanty, both in species and individuals. Birds were the most interesting, being numerous in species and fairly so in individuals. Many of the species of birds seem to have their northern limit in this valley. Other animal life such as reptiles and butterflies was scarce. The long drouth may have been partly the cause of the scarcity.

Big Sandy Creek, Arizona.

July 15 to 26, 1902.

Mammals.

Spermophilus grammurus. Not common; two caught at Mc Gee's ranch and two or three others seen elsewhere.

Lepus harrisi. Rather common on the hills and in the drier parts of the valley.

Castor canadensis frondator. I saw stumps of trees cut by beavers along the creek above the mouth of Sycamore Creek. No beaver are now known to exist along the Big Sandy, but a few may still live in some of the eastern branches. My informants think they were all caught out two or three years ago. No one knew of any Fiber here.

Onychomys sp.? I found this species only at the upper end of the valley at about 2800 alt., and on the divide between Big Sandy Creek and Bill Williams River at 2400 alt.

Neotoma sp.? Nests seen in a few places in crevices of cliffs and in bushes. Nearly all were old and wood rats are evidently now rare, though they appear to have been more common a few years since.

Peromyscus eremicus. Not common.

Thomomys fulvus. Common in several places. No traces seen above the bottoms.

Dipodomys merriami. Not common.

Perognathus sp.? Caught one small pocket mouse the first night we were in the valley, at 2800 alt., and another on the divide between the Sandy and Bill Williams at 2400 alt. This is evidently a species of the higher region, and was found on hillsides of moderate slopes.

Perognathus penicillatus. Not common. Found only in sandy bottom lands. (I am strongly of the opinion that there is a mistake in the records of Woodhouses type. I doubt its having been taken at San Francisco Mountain, but it may possibly have been taken in the bottom land of the little Colorado. Has any other than the type specimen been taken further north east than Big Sandy Creek?)

Perognathus intermedius. Taken on hillsides and gravelly slopes at Mc-Gee's.

ranch and on hillsides and in a narrow sand wash in the hills at Clark's ranch. None were taken in creek bottom land. Evidently not very common.

Lepus floridanus arizonae. Rather common.

Lepus texanus eremicus. Not common.

Canis ochropus ester? A few tracks seen; heard two or three times; an old skull picked up. Apparently not abundant in this region now.

Urocyon cineroargentatus. Mc Gee's boy tells me that he sees one quite often evenings as he goes after the cows. I set traps for it and the first night one trap was robbed of its bait without springing the trap, but the baits and traps were not disturbed afterward. One night I heard one "barking" around camp.

Procyon lotor. Saw tracks of one raccoon along Mc Gee's ditch.

Bassariscus are said to occur on Burro Creek.

Myotis californicus? The only one taken here was caught with a net as it was drinking at the ditch late one evening. I suspect that this species is late in coming out and perhaps is common.

Myotis sp? A larger Myotis was common and came about earlier. Where the road crossed the ditch at camp at McGee's ranch the ditch widened and formed a little pool. Here many bats came to drink, and we caught a number as they swooped down across the water, with a butterfly net.

Pipistrellus hesperus. Abundant. Some were abroad before sunset.

Lasiurus borealis teliotus. Not very common. Caught at the pool in the ditch

Mammals 2.

Vespertilio fuscus? These do not seem to me to look quite like this species, but probably my memory of it is at fault. A flock flew over a particular part of the orchard; not seen elsewhere around the ranch. They flew steadily but rather high and were easy to shoot when the wind was not strong, which was the case most nights. They came out at early twilight. All shot here were ~~xxixxx~~ Females.

but found none. The burrows seen did not appear to be used, and it is probable that not half a dozen muskrats now inhabit the lake. I shot the specimen obtained at dusk as it was swimming along the shore. I saw no fish bones, shell heaps, tule cuttings, or other evidences of muskrats feeding around the lake.

Mus musculus were common at Needles. Several were caught in irrigating a small alfalfa field while we were there.

Residents of the Valley are unanimous in saying that there no Thomomys in the bottom lands. I saw no mounds on the mesas.

Dipodomys merriami ss? Apparently rather common in the sandy washes of the mesa near Needles. A rancher on the Arizone side, in the bottom, says they are common at his place.

D. deserti. Common on the Arizona side in sandy land in the bottom. I did not notice any burrows of this species on the California side.

Perognathus penicillatus. Common all over the Valley.

Lepus floridanus arizonae. Common.

Felis . Residents tell me that "mountain lions" are sometimes seen in the Valley.

Canis ochropus estor? People at Needles tell me that coyotes are common there. We neither saw nor heard coyotes in the Valley.

Urocyon californicus? Residents of the Valley say that a gray fox inhabits the timbered bottom lands. One man said that he had shot them in trees.

Vulpes macrotis is said to occur on the mesas of both sides of the river.

Procyon pallidus? I saw raccoon tracks in many places, but none disturbed any of the traps that I set for them.

Bassariscus? Residents here say that "civet cats" occur in the Valley, but all say that the animals had no rings around the tail, ie. tail unicolor. I got a glimpse of some such animal turning to enter its burrow on the lake bank. I set two traps in the burrow, in the morning both were sprung but empty.

Lutra canadensis pacifica. Fletcher says that there are a very few otter along the river.

Mephitis occidentalis. Seems to be common in the Valley. Mr. Hutt found a female suckling five young in a small dry patch of tulles in an opening in the brush, and brought me the young leaving the mother for dead. I got him to go back with me for her, but she had disappeared.

Several men told me that they occasionally see skunks with white backs and white tails in the Valley.

Spilogale is said to occur, but I saw none.

Pipistrella hesperus were abundant at Needles but scarce at Y Lake. I saw a somewhat larger bat at Needles, but obtained none.

I saw nothing that appeared to be Nyctinomous.

Big Sandy Creek, Arizona.

July 15 to 23, 1902.

Birds.

Ardea virescens anthonyi. Several seen along the ~~ditches~~ ditches. Two birds of the year shot. No adults recognized.

Tringa minutilla? I saw a small flock of small sandpipers flying along the creek near Neales ranch.

Totanus solitarius cinnamoneus? Two or three times I saw a sandpiper that looked like this species fly up along ditches.

Aegialitis vocifera. Seen frequently.

Lophortyx gambeli. Rather common.

Zenaidura macroura. Common.

Melopelia leucoptera. Common around the ranches and in the willow and cotton wood groves; occasional on the giant cactuses. Known locally as the Sonor Dove.

Columbigallina passerina pallescens. One shot and others heard at Mc Coé's ranch; not noticed elsewhere.

Cathartes aura. Not abundant, but generally distributed.

Buteo borealis calurus. Two seen in the canon above Clarks ranch. Not seen elsewhere. Hawks were conspicuous by their absence.

Buteo abreviatus. I shot one in the canon above Clark's ranch. It was not wild. One eye was stone blind.

Micropallas whitneyi. Heard at Neales ranch and Mc Coé's ranch; three shot at night at Clark's ranch. I opened quite a number of old woodpecker hole in giant cactuses and in one hole found the dead and dried carcasses of t two nearly grown young; other burrows showed signs of having been used this summer, but none contained live birds. I heard quite a number of Elf Owls at Clark's ranch but they did not seem at all common elsewhere.

Geococcyx californianus. Saw but one.

Coccyzus americanus occidentalis. Heard a number of times and seen twice in willow thickets.

Dryobates scalaris bairdi. Not common.

Melanerpes uropygialis. Commonest of the woodpeckers, but not plentiful.

Colaptes chrysoides. Seen occasionally on the giant cactuses on the hills and more often in the willow groves in the bottoms.

Phalaenoptilus nuttalli. Heard frequently. Two shot at Mc Coé's ranch.

Chordeiles acutipennis texensis. Abundant.

Saw no Aeronautes anywhere along the Sandy this summer, but in the winter of 1880 they were quite common in the canons.

Tyrannus verticalis. Common.

Myiarchus mexicanus magister. Nest and four eggs found in a giant cactus July 20th. , female shot; a few others seen.

Myiarchus cinerascens. Common.

Sayornis nigricans. Seen occasionally along the ditches.

Sayornis saya. Saw one immature bird.

Pyrocephalus rubineus mexicanus. Rather common near water.

Corvus corax sinuatus. Saw several.

Molothrus ater obscurus. Not common.

Xanthocephalus xanthocephalus. Saw two males at Clark's ranch.

Agelaius phoeniceus. Saw a small flock flying along the creek.

Icterus cucullatus nelsoni. Rather common.

Icterus bullocki. Not nearly as common as nelsoni.

Carpodacus mexicanus frontalis. More or less common everywhere.

Astragalinus psaltria arizonae. Seen occasionally.

Amphispiza bilineata. A few seen.

Melospiza fasciata fallax. Occasional along the streams and ditches.

Pipilo aberti. Not very common.

Zamelodia melanocephala. Saw one male at Clarks ranch.

Cuiraca caerulea.lazula. Rather common at Mc Coe's ranch and seen occasionally at other places.

Petrochelidon lunifrons. Seen occasionally, perhaps migrants; saw no nests

Tachycineta thalassina. Seen in numbers twice; migrating.

Phainopepla nitens . Rare.

Lanius ludovicianus excubitoroides. Seen twice.

Vireo belli pusillus. Seen and heard along the stream, but not common.

Helminthophila luciae. Rare; two shot.

Dendroica aestva. Several seen; migrants.

Icteria virens longicauda. Rather common. Noisy, as usual.

Mimus polyglottos. Seen twice.

Harporhynchus curvirostris palmeri. One shot. I think I saw others but they may have been crissalis.

Harporhynchus crissalis. Not common.

Helodytes brunneicapillus. Not common.

Thryomanes bewicki leucogaster. Rare; two shot; moulting.

Auriparus flaviceps. Rather common.

Polioptila plumbea. Rare.

Bill Williams River, Arizona.

We drove down to the river across a sloping mesa, which appeared to extend up the river a dozen miles. On the opposite side the mountains came down close to the river. Across the river, a little higher than the road than the road struck it, is the little mining camp of Planet, with the smelter of the Planet mine, now idle. I drove down the river three miles to the Augsdale ranch, camping ther four days; then going back a mile turned up a long dry wash, going south, and circling around west over a mesa and north west to the river at Macks mill, on the Colorado.

Augsdales ranch is eight miles above the mouth of the Bill Williams River. but there is no passage for wagons that way. The canon of the Bill Williams River here is bordered with high cliffs of volcanic rock, which enclose a sandy wash a quarter of a mile wide, carrying a considerable growth of arrowwood, water-mody, willow and cottonwood. The water now runs intermittently in this canon, Augsdales ditch is dry and the ranch is nearly ruined by the drouth. Bats were abundant, mice fairly plentiful, but other mammals very scarce. Birds were less plentiful than the favorable conditions lead me to expect and most species were moulting.

Bill Williams River, Arizona.

Mammals.

July 27 to 31 1902

Neotoma . A few old nests seen but they appear uninhabited. None caught.

Peromyscus eremicus. Rather common.

Dipodomys merriami. Not very common. Two caught.

Perognathus penicillatus. Rather common in the brush in the sandy bottom land. None caught on the hillsides. Ants were abundant and a nocturnal species destroyed a large part of the mice trapped.

Perognathus intermedius. Common on the rocky hillsides; none found in the bottom land.

Lepus floridanus arizonae. Rare. Saw but one.

Lepus texanus eremicus. Saw one a mile before reaching the river. No others seen.

Mephitis occidentalis. Caught one. No other signs of their presence.

Canis ochropus ester? Picked up one skull. Saw a very few tracks.

Myotis californicus? Rather common.

Pipistrellus hesperus. Abuncant.

Antrozous pallidus. Rather common. Late in coming out. Flew low. Several caught in butterfly net.

Bill Williams River. Arizona.

Birds.

July 27 to 31 1902

Tantalus loculator. Saw one in the stream. Tame. Apparently immature.

Lophortyx gambeli. Common.

Zonaidura macroura. Common.

Melopelia leucoptera. Common.

Columbigallina passerina pallescens. Two seen.

Cathartes aura. Rather common.

Dryobates scalaris bairdi. Two or three seen.

Melanerpes uropygialis. Rather common.

Phalaenoptilus nuttalli. One shot; another seen; none heard.

Chordeiles acutipennis texensis. Not very common.

Selasphorus platycercus? Saw a hummingbird that seemed to be an immature male of this species.

Tyrannus verticalis. Not common.

Myiarchus cinerascens. Not common.

Sayornis nigricans. Saw one.

Empidonax difficilis. One shot.

Pyrocephalus rubineus mexicanus. Not common.

Corvus corax sinuatus. Heard one.

Molothrus ater obscurus. Not common.

Xanthocephalus xanthocephalus. Seen.

Icterus parisorum.

Icterus cucullatus nelsoni. Rather common.

Icterus bullocki. Two or three seen.

Carpodacus mexicanus frontalis. Common.

Pipilo aberti. Not common.

Pirange ludoviciana. A few seen in vineyard. Migrants.

Petrochelidon lunifrons. A few birds seen, probably migrants. Nests seen on a cliff.

Lanius ludovicianus excubitoroides. One seen.

Harporhynchus crissalis. One seen.

Auriparus flaviceps. Rather common.

Polioptila plumbea. Saw two.

Colorado Valley.

General Description.

The region that I refer to in these notes is that marked in some maps as the Great Colorado Valley. It commmences below the canon at the mouth of the Bill Williams River and extends about one hundred miles down the river, being the largest valley on the course of the Colorado with the exception of the one known in part as the Colorado Desert. The arable part of the Great Colorado Valley is practically limited to the bottom lands, which average about five miles wide, the mesas each side being sandy or gravelly and sparsely clothed with larrea, pala verde and cactuses. The bottom lands usually have good soil, though considerable areas are strongly alkaline. Much of the valley has a scattering growth of mesquit and screw bean trees. Here and there are small groves of cottonwoods and willows are not much more plentiful, commonly along the main or most recent channels of the river. Arrowweed is toundant. There are a few lagoons, mostly small, along the old channels. The river runs near the western mesa nearly to Ehrenberg then crosses to the eastern side of the valley.

I entered the valley at Macks Mill near the upper end, going thence to Parker where the Indian school is located. From there the little traveled road follows near the eastern mesa, so that I did not see the river itself for fifty miles, finding water in but two places, one of these being flood water from a recent rain in the mountains eastward. I ferried at Ehrenberg and drove W. S. W. through bottom lands xx 15 miles to McFee's ranch. Here I found the head of a narrow lagoon which McFee told me contained water nearly all the way to its outlet in the main channel a dozen miles south. There were few trees of any size near the lagoon, but the banks were high and and it looked like a promising collecting ground so I stopped at McFee's ranch four days. The lagoon is shallow in the upper part, with a few tulles growing in the water. The lagoon is supplied by seepage from the sides, its surface level being that of the water table of the valley. Leaving McFee's I drove down the west side of the lagoon to opposite the little settlement

(Over)

of Cibolo on the Arizona side. Here a point of the mountain comes down to the river on the California side and I was told that both burro deer and bighorns were to be found. I stopped two days and then went west three miles to a small lagoon that seemed a more promising hunting base, but after two days more unsuccessful search I started on across the Chuckawalla Desert.

Colorado Valley.

Mammals.

Aug. 1 to 18, 1902.

Odocoileus hemionus eremicus. Saw two females Aug. 13, among ironwood trees in a wash in the hills five miles west of the river. Saw fresh tracks this and three succeeding days in a number of washes, but usually of but one or two deer in a place. They seemed to be wandering about a great deal and the the tracks seen might have all been made by a very few deer. They seemed to frequent the larger washes where numbers of ironwood and pala verde trees grow. They are said to feed here mostly on the twigs of the ironwoods, and such is my belief. They do not appear to go to any height in the mountains, probably because of the absence of the ironwoods there. They appear to water principally at the sloughs and lagoons in the river bottom.

Ovis nelsoni. I saw very few signs of bighorns here, but they are said to be more or less common in all the desert mountains west of the Colorado river but all persons that I talked with concurred in saying that there were very few bighorns east of the river. I was told that they were occasionally seen coming to water at the river where mountain points came close down to the stream.

Spermophilus tereticaudus. More or less common in the higher parts of the bottom lands and along the edge of the mesas. Not often found in those parts of the bottoms subject to overflows.

Ammospermophilus leucurus. Saw two or three when hunting deer 25 miles s. s. w. of Ehrenberg and four or five miles from the river. Probably not common this close to the river. Saw the last A. harrisi 20 miles north east of Parker, Arizona.

Castor canadensis frondator. A number of men told me that they had seen cuttings and other evidences of the presence of beavers. They are probably found at intervals all along the river. I have seen very little of the river itself and have had almost no opportunity to look for indications of beaver. One can accomplish very little here in trapping for them without

a boat. They appear to live principally on the banks of the main stream, but I heard of two places where they had been found in lagoons.

Sigmodon sp.? I enquired of many people about cotton rats, but without finding any one one who knew of them until I asked McFee. He said he had seen them in hauling barley hay ina field on the Blythe ranch some miles up the river. I trapped first in the salt grass and arrowweed around the lagoon at his place, but without success; then I tried the field, setting out o' sight and cyclone traps in a sweet potato patch where I found leaves bitten off, and in a field of sorghum where the canes were cut in lengths of six to ten inches long. I caught only Perognathus in the sweet potatoes, and one Peromyscus in the cane. Then I tried #0 steel trap in the cane baiting with oatmeal; the first night these caught only Neotoma. I reset the traps without baiting and next morning I had three Sigmodon in them. This was the last day of my stay there. At the Cibolo settlement I was told that they sometimes saw cotton rats when mowing alfalfa. The arrangements for crossing the river were so bad that I did not attempt to trap on that side.

Neotoma vetusta? I saw little sign of brush rats in the bottom lands of the Colorado, yet they must be common, judging from their abundance in McFees cane patch. Neither did I see much indication of their presence on the mesas.

Peromyscus eremicus. Not common.

P. texanus deserticolus. The only one found was caught in a patch of sorghum at McFees.

Fiber zibethecus pallidus. Common in the upper part of the lagoon at McFee's ranch, where there were thin patches of tulles growing in the water. There was no boat on the lagoon and in most places the arrowweeds and mesquit overhung the water. As the mud was deep it was difficult wading so I could do but little in the way of trapping I found a few burrows entering the bank just under water, but caught no rats in traps set there. The four rats taken were shot. They were not very shy and some were abroad an hour after sunrise.

Colorado Valley.

Birds.

Aug. 1 to 18 1902.

Podilymbus podiceps. Saw one several times on the lagoon at McFees.

Larus sp.? Saw a flock of medium sized gulls pass down the river at Ehrenbe

Phalacrocorax sp.? Saw small flocks of cormorants at some of the lagoons.

Lateola penelope. Shot one out of a small flock at a lagoon.

Querquedula discors. Shot two females and saw others at McFees ranch.

Tantalus loculator. Abundant on some of the lagoons. Not shy.

Ardea herodias. Seen occasionally.

Ardea virescens anthonyi. Rather comm. Mostly young of the year seen.

Nycticorax nycticorax naevius. Seen occasionally.

Fulica americana. Not common except on the lagoon at McFees.

Himantopus mexicanus. One flock and some single birds seen.

Eremetes occidentalis. Saw a flock at one of the lagoons.

Heloaromas solitarius. Saw several at hte lagoons.

Numenius longirostris. Saw a small flock going down the river.

Aegialitis vocifera. Not very common.

Lophortyx gambeli. More or less common.

Zenaidura macroura. Common.

Melopelia leucoptera. Not common on the Arizona side. None seen on the California side though they no doubt occur there also.

Columbigallina passerina pallescens. One shot in California opposite Cibolo.

Cathartes aura. Seen frequently.

Accipeter cooperi. Saw several.

Parabuteo unicinctus harrisi. Shot one at Ehrenberg, and another at McFees ranch in California. Saw two others at the latter place.

Buteo borealis calurus. Saw several.

Falco sparverius deserticola. Saw one above Ehrenberg.

Pandion haliaetus carolinensis. Saw the remains of one at McFee's ranch, killed a week previously.

Megascops trichopsis? One shot opposite Cibolo. Others heard.

Bubo virginianus subarcticus? Heard in several places.

Birds 2.

Geococcyx californianus. Not common.

Dryobates scalaris bairdii. Rather common.

Melanerpes uropygialis. Rather common.

Colaptes collaris. Rare.

Phalaenoptilus nuttalli. Heard several times.

Chordeiles acutipennis texensis. Common.

Aeronautes melanoleucus. Saw half a dozen.

Tyrannus verticalis. Not common.

Myiarchus cinerascens. Saw but few.

Sayornis ~~cinereus~~ nigricans. Seen rather frequently around lagoons.

Sayornis saya. Rare.

Contopus richardsoni. Saw one.

Pyrocephalus rubineus mexicanus. Rare now the main body having probably gone southward. A ranchor at Ciboio told me that he had one swarm of bees and that these flycatchers ate them until he lost his only swarm.

Corvus corax sinuatus. Seen frequently.

Molothrus ater obscurus. Rather common.

Xanthocephalus xanthocephalus. Seen here and there in small numbers.

Agelaius phoeniceus. Saw very few.

Icterus bullocki. Rare.

Carpodacus mexicanus frontalis. Common about ranches.

Chondestes grammacus strigatus. Saw one at Ciboio.

Melospiza lincolnii lincolni. Not common. Seen only about sloughs and lagoons.

Pipilo aberti. Rather common.

Cyanocitta cristata bromia. Seen rather often about ranches.

Cyanospiza amoena. Not common.

Piranga ludoviciana. Migrants seen occasionally.

Piranga rubra cooperi. Shot a male at the lagoon opposite Ciboio.

Petrochelidon lunifrons. More or less common.

Tachycineta thalassina Seen migrating at Pallor.

Phainopepla nitens. Rare.

Lanius ludovicianus excubitoroides. Rare.

Vireo bellii pusillus. Heard occasionally.

Over

Birds 2.

Icteria virens longicauda. Not common.

Wilsonia pusilla pileolata. Common migrant.

Mimus polyglottos. Rare.

Helodytes brunneicapillus couesi. Rare.

Auriparus flaviceps. Rather common.

Polioptila plumbea. Seen occasionally.

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